

HISTORY AND DEVELOPMENT
OF SIGHT-SAVING CLASSES IN
UNITED STATES
Mrs. Winifred Hathaway

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AMERICAN FOUNDATION
FOR THE BLIND INC.

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HISTORY AND DEVELOPMENT OF
SIGHT-SAVING CLASSES IN THE UNITED STATES

by

Mrs. Winifred Hathaway

Associate Director of the
National Society for the Prevention of Blindness

Presented at the Third Annual Meeting of the
International Association for Prevention of Blindness
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TO THE HONORABLE MEMBERS OF THE HOUSE OF REPRESENTATIVES

AND OF THE SENATE

OF THE STATE OF NEW YORK

IN SENATE, JANUARY 1, 1901.

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REPORT OF THE COMMISSIONER OF THE LAND OFFICE

IN RESPONSE TO A RESOLUTION PASSED BY THE SENATE

ON JANUARY 1, 1901.

HISTORY AND DEVELOPMENT OF SIGHT-SAVING CLASSES IN THE UNITED STATES

Into the foundation of any great building, whether such be an actual architectural structure, a progressive movement or a cause, are woven the thoughts and ideals of thinkers living in advance of their times. Those in the United States interested in the development of special educational advantages for partially seeing children are ever mindful of the fact that away back in 1802, Franz Von Gaheis of Austria not only recognized the need of special education for this group, but suggested definite ways in which such opportunity might be offered. As far as is known, he was the first to recognize that partially seeing children were quite as much misfits in schools for the blind as in those for the normally seeing. Later, Maddox and Bell, in England, came to the same realization and laid the foundation of the Schools for Myopes in that country, the actual establishment of which was due to James Kerr and Bishop Harman. In 1907 Levinson called attention to the necessity of special schools in Germany. So far as is known, the first classes were established in England in 1908. Strasbourg established classes in 1909.

It was from these myope schools that the United States received its direct inspiration. History repeats itself. Over a hundred years after the recognition by Von Gaheis of the undesirability of attempting to educate partially seeing children with those who were blind, Edward E. Allen, Superintendent of Perkins Institute for the Blind in the United States, came to the

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same conclusion through actual experience in his own school. On a visit to England in 1909 he learned of the Myope Schools recently established there, and after studying their methods of carrying on the work, felt that he had found a solution for his own problem.

It took considerable time to convince educational authorities in the United States that special opportunities were necessary for partially seeing children, but due chiefly to Mr. Allen's efforts, a class was established in Boston, Massachusetts, in April, 1913. In September of that year, due to the efforts of Mr. Robert B. Irwin, a second class was established in Cleveland, Ohio. From these two classes have developed the 409 classes in existence in the United States in September, 1932, representing 118 cities and 22 states.

These classes are now so generally accepted as a part of the educational system, that the period of fundamental experiment may be said to be of the past. But it must always be borne in mind that every class, of whatever type, should be a laboratory out of which may evolve things of greater worth. In this sense, classes for partially seeing children will always be experimental, and in the methods presented in this paper for administering and teaching such classes there is no assumption that what has been decided upon as best for today's needs, may be considered desirable to meet the possible changing attitude of tomorrow.

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may be noted in the change of name. Since the classes in the United States from the beginning offered opportunity not only to myopes but to those suffering from other types of eye difficulties, the British appellation of "Myope School" was inapplicable. The first classes were known as "Classes for the Partially Blind." The term, however, was soon abandoned since it laid emphasis on the negative side. A special effort was being made at that time for conservation of natural resources, hence the term "conservation" was in very general use. Thus the classes for partially seeing children came to be known as "Conservation of Vision Classes." This was later discarded in favor of a simpler term, "Sight-Saving Classes." These classes have come to be recognized as a very important part of a national movement for conserving sight and preventing blindness, a movement quite separate from welfare work for the blind and also separate from the education of blind children.

CANDIDATES FOR SIGHT-SAVING CLASSES

The first step for any community considering the establishment of sight-saving classes is to determine what pupils are candidates and whether there are in such community enough children to warrant the establishment of a class. In the United States each state has the right to make its own educational laws, hence so varied are the standards in different communities regarding the partially seeing child, that one eligible for a sight-saving class in one state may be ineligible in another. Many efforts have been

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made to reach common ground. This, however, is the more difficult because of the nature of the problem. Two children having the same degree of low visual acuity may react quite differently to visual impressions. One may be able, through experience, so to interpret his visual impressions--however indistinct these may be--that he can carry on his work in a sight-saving class; the other, through lack of such ability to interpret, may have to use the sense of touch as his chief avenue of educational approach.

The great stumbling block, however, is the question of myopia. So diverse are the opinions among ophthalmologists regarding this eye difficulty, that the educator is quite at a loss to know whether a child with myopia should or should not attend the sight-saving class. Since the decision of candidacy must, therefore, rest with the ophthalmologist and be considered an individual problem, the school physician and general practitioner are concerned to know what children should be routed to him for this final decision.

At the University of Chicago a meeting of ophthalmologists and educators was called to suggest guides for routing children to ophthalmologists. The following broad program was decided upon:

1. General statement. Children having a visual acuity of 20/70 (6/21) or less in the better eye after proper refraction. In addition, the following are recommended as potential candidates:

- a. Children in elementary schools having four or more diopters of myopia.
- b. Inactive, subsiding (or regressive) cases, such as interstitial or phlyctenular kera-

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titis, optic neuritis, trachoma, etc., in which some irritation may be present, provided the approval of the attending physician is given.

2. All cases must be considered individually.

3. Any child who in the opinion of the ophthalmologist would benefit by assignment to a sight-saving class, subject to suggestion for treatment and training by such ophthalmologist, and the acceptance of the educational authorities having charge of such classes.

4. It is assumed that all the children assigned to sight-saving classes have average normal mentality.

Since children with a visual acuity of 20/200 (6/60) will, in all probability be unable to use sight-saving class equipment, they are recommended for Braille work.

PROPORTION OF CHILDREN REQUIRING THE ADVANTAGES OF A SIGHT-SAVING CLASS.

In the United States the most conservative estimate of the proportion of children requiring the advantages of a sight-saving class, is one in a thousand of the school population. However, in those states and cities that have most fully developed this type of education, the proportion more nearly approximates one in five hundred of the school population.

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But it becomes the duty of the ophthalmologist not only to decide upon the candidacy of pupils, and, if glasses are necessary, to check up on the prescription, but to see that records are prepared and that copies of these are made available for the educational authorities so that teachers may be conversant with the type of eye difficulty with which they may have to deal. Such records state the time of the next examination and make recommendations for the amount of close eye work. In many cases, in addition to the work already mentioned, ophthalmologists visit sight-saving classrooms from time to time to see the actual conditions under which the children are working and to assist the teacher in carrying out instructions.

In the United States ophthalmological care is provided in various ways: private physicians, ophthalmologists of the Board of Education or the Board of Health, and private agencies.

ADMINISTRATION.

When candidates have been decided upon and the need for a class demonstrated, consideration is given to the selection of a school building. Since children eligible for sight-saving classes are social beings, great thought is given to see that they have the opportunity of mingling, as much as possible, with their normally seeing companions. It is felt that segregating them in a group by themselves without such opportunity for contact, may add another handicap, that of social disability.

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in the United States these children are placed in special sight-saving classrooms, where under the direction of a trained teacher who follows the recommendations of the ophthalmologists, they take all work requiring close use of the eyes; they join their normally seeing companions for oral work, rote singing, musical appreciation, dramatic work, and other activities that are decided upon in a cooperative program.

The proportion of children needing this type of education is so small in comparison with the general school population, that one class must, of necessity, serve a district or community. Hence children of several grades or standards will be found in the one group. It is, therefore, essential for the success of such class, that a school be selected having the same grades or standards as those represented in the sight-saving class. Some children have to travel a great distance to reach the sight-saving class; hence the school selected is as centrally located as possible.

LIGHTING, DECORATION OF ROOM AND GENERAL EQUIPMENT.

It is evident that if a modern building can be selected there will probably be little necessity for remodeling, since decoration and lighting of most of the new school buildings much more nearly approximate the ideal for normally seeing children than in the past, and in this particular, what is ideal for normally seeing children is likewise ideal for the partially seeing. Ideal conditions to be looked for are somewhat as follows:

Natural Lighting.

Unilateral natural lighting, to the left of the pupils,

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is preferable, the glass area at least one-fifth, preferably one-fourth, of the floor area. Since the best light comes from the top of the window, the glass area reaches within six inches of the ceiling and the bastions between windows are as narrow as possible to prevent shadows. In order to prevent glare in the eyes of the children and on blackboards, windows are not placed nearer to the blackboards than seven feet. Surroundings likely to cause glare, such as whitewashed buildings, glass roofs, etc., are avoided. In temperate latitudes, east or west, or northeast or northwest exposures are usually selected, since these give a maximum of light with a minimum of glare. The natural light is controlled by two buff colored translucent shades, placed on rollers near the center of the window so that one may be pulled up and the other down. Shades are made wide enough to avoid streaks of light at the side, and care is taken to see that there is no space between the rollers.

Artificial Lighting.

In the early classes in the United States artificial lighting was thought to be unnecessary, since it was planned that only oral work would be undertaken on days when the natural light failed to give sufficient illumination for eye work. It was soon discovered, however, that children would use their eyes. In a mixed group of four or five grades or standards, subjects that could be presented orally to the younger children were of little interest to the older ones. Plans were therefore developed to make available artificial lighting meeting the same

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requirements as natural lighting -- sufficient illumination for the type of work to be accomplished, well diffused, well distributed and without glare; by no means do all the sight-saving classes in the United States approximate this ideal.

Walls, Ceilings, Woodwork.

The color of walls is determined somewhat by the climate. In temperate zones, light buff walls with white or cream ceilings have proved most satisfactory; they are not only cheerful but, what is of far greater importance, have an excellent reflecting value. A neutral tone of woodwork is used. In order to reduce glare to a minimum, all surfaces, walls, woodwork and ceilings are in flat finish.

Furniture.

Rooms are equipped with a teacher's desk and chair and with adjustable, comfortable, hygienic seats and desks that lift to an angle, all in dull finish. It will be necessary to add closets large enough to hold material of greater proportions than that used in regular grades, a long table and chairs for handwork, and, in classrooms intended for young children, kindergarden tables and chairs, a sand table for project work, and one or two easels.

Blackboards.

Blackboards are, as far as possible, of good slate and are kept in condition by frequent hygienic cleaning and by re-finishing when necessary. Blackboards in three parts, each of which may be pushed up or down, make it possible for the pupils to keep work on a level with their eyes.

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The arrangements thus far mentioned as necessary for sight-saving class pupils differ in no wise from those for the normally seeing.

Reading Material.

The procedure in the education of partially seeing children in the United States had to be developed by the trial and error method. It was soon discovered that, given sight, no matter how poor this might be, children would read. In consequence, some method had to be devised by which they could read with the least possible eye fatigue.

For very young children there were in existence large reading charts with clear, distinct letters. But for children even slightly more advanced no material was available. Hand made charts came into use, printed with rubber stamp letters of large size. This proved not only most laborious work for teachers and pupils, but it was found that even when the printing was done with painstaking care, the ink was apt to be uneven, making the result more or less difficult to read. It was also found that although spacing between lines could be regulated by an attachment on the easel on which the printing was done, it was most difficult to keep the correct spacing between letters and words. Usually one or two children in the class proved able to do this laborious work better than others, and since too much of the teacher's time could not be devoted to the preparation of such material if she were to accomplish all else required of her, this devolved upon the pupils who could do it best.

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For a short time this may have been good practise, but after a period there was no chance of further development, and the precision and length of time required to accomplish the work often caused a nervous physical strain.

There was, also, a second element to be considered. How were these children to know what to print? The teacher could not give the necessary time and attention to dictating the work, and if material were prepared by her for the children to copy there was the strain of reading the original.

The outcome was the development of books in large, clear type on buff colored paper. The selection of paper took into account the findings of illuminating engineers that black on yellow is more legible than black on white. It also took into consideration the opinion of some ophthalmologists that yellow is the most fatiguing color because it leaves the longest retinal image. A compromise was made by using enough yellow to help in legibility, but not enough to cause eye fatigue.

At first a 36 point type was used (letters $1/2$ " in size), but after considerable research it was found that the eye span is too short to make this size the most advantageous, and special books for sight-saving class children were thereafter printed in 24 point type (letters $1/3$ " in size). There has not been, however, a sufficient amount of research on this subject and there is no certainty that this type is the one that will continue to be used in future.

For children with such low static vision that they must hold their material close in order to be able to see it

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at all, a type that includes more in the eye span may eventually prove more satisfactory.

Writing Material.

Again, in the early days, individual seat blackboards were used with chalk, but no one could work long in any group of handicapped children without discovering that their special difficulty may be a symptom of general physical condition. Much use of chalk at such a comparatively close range caused irritation to the throats, and chalk dust, unsanitary for children in good general health, proved even more disastrous to those in poor physical condition. For seat work, therefore, large sized buff colored paper and heavy leaded pencils were substituted. Considerable work is still done on the large wall blackboards since children get the benefit of change in position and eye focus and seem to be able to work at a greater distance from the board than when the boards are at the seats. Efforts were made to obtain a chalk in large size that would make a clear, heavy line. The chalk now used is a mill crayon about one inch in diameter.

In addition to general writing material, sight-saving classes in the United States are equipped with special typewriters manufactured with a type as nearly as possible approximating that in their large type books. It must be emphasized that typewriting is never taught as a means of earning a living, but as a medium of written expression. Naturally the touch system is used, and just as soon as the mechanics of the machine are mastered, the children do their original work on the typewriter. This saves a very great

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deal of close eye use and since the type is large enough and clear enough for the children to be able to see without eyestrain, they may use their eyes for short periods to read what they have typed and to make the necessary corrections.

The preparation of original work on the typewriter builds up exceedingly good eye habits and at the same time imbues the child with the idea of doing well the first time whatever he is undertaking, thus avoiding copying and recopying of material. It has been demonstrated that even quite young children can be taught to use the typewriter.

DIVISION OF SUBJECTS.

It has been stated that subjects requiring close use of the eyes are undertaken in the special class and as many others as seem desirable with normally seeing children. In the first group of subjects are reading, writing and arithmetic; two subjects not requiring close use of the eyes, handwork and typewriting, are included in this group; handwork because it is most difficult for teachers who do not understand the reactions of various eye difficulties to know what may prove harmful, and typewriting because this opportunity has not as yet been offered to normally seeing children in regular grades or standards and hence must be treated as a special subject in the sight-saving classroom.

The so-called social subjects, geography, history, natural science, appreciation of music, rote singing, etc., may be taken with the regular classes, but the preparation for these subjects, such as maps without detail, fulfillment of reading assignments,

deal of close eye use and since the type is large enough and clear enough for the children to be able to see without eyestrain, they may use their eyes for short periods to read what they have typed and to make the necessary corrections.

The preparation of original work on the typewriter builds

up exceedingly good eye habits and at the same time induces the child with the idea of doing well the first time whatever he is undertaking, thus avoiding copying and recopying of material. It has been demonstrated that even quite young children can be taught to use the typewriter.

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etc., is done by the sight-saving class teacher, although the teacher's work in this particular is being considerably lessened by the cooperation of map makers in putting out maps in clear outline with no detail.

ILLUSTRATIVE MATERIAL.

There seems to be no reason why children in sight-saving classes should be deprived of illustrative material. Large, clear pictures without detail used with discretion add greatly to the interest and development of the pupil.

MATERIAL FOR MOTIVATED HANDWORK.

The modern method of handwork for all groups is applied in the sight-saving class. Handwork must have a place in the educational program, and in the sight-saving class it must meet certain requirements -- it must be an eye rest; it must be motivated; it must help to satisfy the creative instinct; it must arouse in the pupil such an interest that he will be glad to substitute it at home, as well as in school, for reading and other activities requiring close use of the eyes.

EDUCATIONAL OPPORTUNITIES FOR PARTIALLY SEEING CHILDREN IN SECONDARY SCHOOLS.

In the United States secondary schools are divided into two groups -- junior high schools and senior high schools. In the experimental days there was no thought of offering partially seeing children education in secondary schools. One reason was that methods of carrying on this work before secondary education could be considered had to be developed in the elementary school.

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The real reason, however, lay deeper. It was current opinion that because of the seriously defective vision by which pupils in sight-saving classes were handicapped, they should not be educated beyond what the elementary school had to offer. For some time, so tacit was the acceptance of this opinion, that higher education for these children was not even a moot question, except to the individual teacher who saw the need for some action, especially in the case of myopic children. Not only did these children seem to present greater intellectual ability than any other particular group, but the very fact that their eye condition prevented them from joining in the majority of outdoor games tended still further to make them studious, since they were likely to fall back upon the things they could do, however injurious these might or might not be to their sight.

It became evident to the thoughtful teacher that some children would continue their studies whether or not provisions were made for them, and that it would be much better to have them do so under correct conditions than under haphazard ones. Hence, many teachers took upon themselves the added burden and responsibility of keeping such children in their sight-saving classes after they had completed the work of the elementary school, preparing for them an enriched curriculum and in some instances giving them the actual work undertaken in junior and senior high schools. As the group needing this assistance grew larger, it became evident that better arrangements would have to be made for both pupils and teachers, and the next logical step was to arrange for the education of graduates

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of elementary schools in junior high schools.

Much consideration was given to what arrangements would prove best. It was thought by some educational authorities that since these children had from the time of their entrance into a sight-saving class been imbued with the idea of using the best method for taking care of their sight, they should be able to take the responsibility upon themselves in the junior high school. Others argued that children of junior high school age were altogether too young to assume such a burden of responsibility. The outcome was that wherever possible junior high school classes were established and placed under a trained teacher, the same methods being used as in the elementary school with the exception that the responsibility was gradually shifted from the teacher to the pupils.

In the junior high schools the assignments in reading and for general preparatory work are so much greater than in the elementary schools, that it soon proved impossible for the teacher to read for each pupil those assignments not in large type. Hence, the plan of employing student readers was worked out and is being used in a number of places. According to this plan, student readers are selected from pupils in the regular grades who are doing the same work as the sight-saving class pupils. Instead of reading assignments to themselves, they read them aloud, either in study periods or by special arrangements after school hours. All work, however, is done in the school building under proper conditions, so that when sight-saving class pupils and their readers leave, all preparation has been completed for both groups.

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Naturally, pupils well up in their subjects are selected as readers.

Naturally, a time came when graduates of sight-saving classes in junior high schools presented the problem of how they were to obtain the more advanced educational opportunities offered in senior high schools. To solve this new problem some cities established sight-saving classes in the senior high schools and conducted them in a manner similar to those in the junior high schools. But the majority of educators felt that it was time for these pupils, many of whom had nine years of sight-saving class training, to assume the responsibilities that sooner or later would fall to their lot.

Hence, in the majority of cases, two high schools are selected in different parts of the city and graduates from junior high schools are allocated to them, entering these high schools as do all other high school pupils, except that an adviser -- a supervisor, a sight-saving class teacher, or a senior -- is appointed to help in the selection of courses, to make the necessary contacts with teachers, and to arrange for student readers. Since all freshmen are new to the building, it is necessary to select readers before the close of the previous school year; and usually those readers who have proved efficient in junior high school work are the ones selected.

By the time sight-saving class pupils enter senior high school, they should be so proficient in typewriting that they are able to prepare all their written work directly on this machine. A special portable typewriter has been designed for their use and

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PROVISION FOR PARTIALLY SEEING
CHILDREN IN VOCATIONAL SCHOOLS.

There will be found among sight-saving class pupils, as among those in regular grades, motor-minded children who must be given opportunities for vocational training. In America a few states are attempting to offer such training in a very limited way. Much research is necessary to find what occupations can be safely carried on, and at the same time offer opportunity for employment.

OPPORTUNITIES FOR PARTIALLY SEEING
CHILDREN IN RURAL COMMUNITIES.

A scattered population makes it well nigh impossible to gather together a sufficient number of children in any one rural district to warrant the establishment of a sight-saving class. A few states that have established classes in cities have occasionally made arrangements for rural children to be boarded in the nearest city having such classes.

In some instances where transportation facilities are good, a community class has been established. A greater understanding of the sight-saving class movement has caused teachers in country schools where there may be a partially seeing child to

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reach out for such information and help as will enable them to give such child as much assistance as possible in carrying on the work in the rural school.

METHODS OF ADMINISTERING, SUPERVISING
AND TEACHING SIGHT-SAVING CLASSES.

Administrative Direction.

In states where there is a state director of special education the administrative direction centers in his department. Such administration concerns itself with the arrangements for obtaining and administering the budget and with laying down conditions under which state aid may be granted; certification of teachers according to the provisions of the educational law of the state; inauguration of training courses for new teachers to meet the state regulations; stimulating the formation of new classes throughout the state, in particular in those places where there are no local supervisors; establishing county classes and making other arrangements for the education of rural children needing this type of specialized education.

There are comparatively few cities that have a sufficient number of sight-saving classes to warrant the appointment of a supervisor who shall devote entire time to do this work. Hence, the majority of sight-saving classes are under the direction of a supervisor of all kinds of special classes; unless such supervisors are specially trained to understand this particular type of education, the results are often unsatisfactory.

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dividing their territory into two or more sections and appointing the supervisors experienced in this work to travel from one city and class to another.

Teaching of Sight-Saving Classes.

There are no courses of study specially prepared for children in sight-saving classes; the object always kept in view is to conform as nearly as possible to the work undertaken in the regular grades. There are two reasons for this. These children are mentally as able to undertake the work as are normally seeing children; about four and one-half per cent of the pupils in sight-saving classes are able to return to regular grades; they would be at a great disadvantage if they had been pursuing a different curriculum.

It is the adaptation of the work that is important. With the exception of a very few subjects, the regular school curriculum is followed and the same work is undertaken in the special class as in the regular grade. Where any change is made it is in the nature of a substitution or modification, rather than an omission. Thus, eye fatigue may occur in detailed drawing, but no child is deprived of the chance of illustrating his story by original work because he may not be permitted to draw. He may accomplish the same result by free-hand cutting, by modelling, by a sand table project, or by mass painting. Likewise, no child is deprived of map work in history or geography just because he cannot use the maps provided for normal eyes; his map consists of an outline form, black on buff, or buff on black, or in colors sufficiently contrasted to produce the result of clear outline. There are no names printed on this map; a plan is

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used by which special projects are carried out one at a time; a key to names may be given in large type on the opposite page.

In a few cities music scores are permitted if they are in large type, but in the majority of cases lessons in music are confined to appreciation of music and rote singing. Where a child shows a decided talent for music, instrumental or vocal, special attention is given to him, and efforts are made to provide training under conditions suited to his special needs as a sight-saving class child.

QUALIFICATIONS FOR TEACHERS OF SIGHT-SAVING CLASSES.

Since the work of sight-saving classes is carried on as nearly as possible like that of regular grades, it is essential that teachers of these classes have the fundamental qualities and educational training of any good teacher. It is further essential that they undertake special training for the particular work of teaching a sight-saving class.

There are many reasons why a teacher contemplating specialized work, such as teaching a sight-saving class, should have considerable experience with the normal group. Just so far as it is possible, the education of the handicapped runs parallel to that of the normal. A teacher who does not carry into specialized work the normal attitude, or who becomes so engrossed in her own special work that she loses sight of the normal, is apt to add handicaps to those that already exist in her group.

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experience in teaching more than one, so that she will not have to make too many adaptations to new conditions all at one time. On the other hand, a teacher who remains too long in regular work before undertaking new lines of specialized education is apt to find it difficult to make adaptations to conditions differing from those to which she has become accustomed. Successful teaching in regular grades for at least three, preferably five years, should lay a good foundation and help the teacher to keep the normal viewpoint.

SPECIAL COURSES OF TRAINING.

By special training is meant training that bears a direct relationship to the work of teaching a sight-saving class. There is a diversity of opinion as to what this special training should include. Since it is often difficult for a teacher to take a full year in addition to her fundamental training to prepare for special work, several universities in the United States offer summer courses of six-weeks duration. This may appear a very short period in which to prepare for so important and arduous an undertaking, but a perusal of the work required shows that a real effort is made to give a good foundation.

The student is required to give her entire time for the six-weeks period. The work is divided into four parts: a course on the anatomy, physiology and hygiene of the eye, a course on administration and organization of sight-saving classes, a course on special methods of teaching sight-saving classes, with opportunity for observation and practice teaching in a demonstration sight-saving class. Since an understanding of eye conditions is

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essential for carrying on this work successfully, the greatest emphasis is placed upon this section of the work. Only those teachers are eligible who meet the fundamental requirements, hence they are more or less familiar with the physiology of the eye, so that but a brief review is necessary.

Thirty lectures are given in particular on refractive errors and common eye diseases likely to be encountered in the sight-saving class. At least twenty hours are spent in an eye hospital or clinic where cases are seen and discussed with the ophthalmologists who conducts the clinic. Such clinic usually affords the opportunity to see one or more operations, since the actual knowledge of how, for instance, a cataract may be removed can be gained much better by seeing the operation performed than by reading about it. Thirty lectures with discussions are given in the organization, administration and conduct of sight-saving classes. Thirty lectures with discussions are given in methods of teaching sight-saving classes. Students are required to spend thirty hours in the demonstration classroom to observe methods employed there, and the various reactions of the children; in addition, some practice teaching is done. Personal conferences with the students are held by the instructor and further opportunities are offered for general discussion.

But just as education is a continuing process in all groups, so in sight-saving class work teachers are urged to take supplementary courses from time to time, to keep up with modern methods. In many instances teachers are required to do this in

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order to obtain advances in salary.

FINANCING SIGHT-SAVING CLASSES.

The state makes education compulsory. Such a regulation can be enforced only when education is offered in a form that can be assimilated. Hence, it is only reasonable that the state assume its share in making education possible for all children. Fourteen of the United States have assumed this obligation. The provisions for giving financial aid vary according to the educational laws of the state. Such provisions may take the form of: (a) the appropriation of a per capita amount; (b) the appropriation of a general sum for the establishment and maintenance of classes, the distribution to be made by a specified educational department; (c) an appropriation to cover a part or all of the teacher's salary; (d) a combination of two of the above.

Of the various methods presented, the per capita method has proved the most successful, since, unless otherwise specified, the director in charge of administering the funds may use discretion. A class which is being established needs a large outlay for equipment, whereas a class that has already been equipped has to meet only current expenses, including some additional equipment, such as paper, pens, pencils, etc., and the replacement of worn out material. It is evident that it is possible under a per capita or even under a general appropriation to provide for supervision, either whole or part-time, according to the needs, and to pay for student readers for junior or senior high school students.

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JUSTIFICATION.

It would seem almost unnecessary to have to justify the cost of the education of any child who is educable. Humanitarianism alone would seem a sufficient justification. Yet it must be remembered that the state is responsible to the taxpayers for the use of public monies and that in consequence the state tends to look upon all education as an investment that will pay justifiable dividends.

The object in educating partially seeing children is the same as in the education of any group -- to prevent illiteracy and so to develop the innate powers of the individual that he will not become a liability to the state but an asset of the greatest possible value. This aspect of education is being demonstrated more and more by the method of individual instruction that is being emphasized in advanced school systems, by which a child is developed along the line for which he has the greatest ability. To give a partially seeing child an even chance with the normally seeing to become an asset to the state, it is necessary to provide for him the opportunity to overcome his handicap. In order to do this, such educational facilities must be put at his command as will permit him to develop along the line of his greatest strength, while his weakness, in so far as this is possible, is prevented from getting any worse.

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ULTIMATE AIM.

But underlying all efforts for the education of partially seeing children there should be a never ceasing work of doing everything possible to make special education unnecessary through reduction in the number of pupils by:

1. Prenatal and natal care.
2. Greater attention to the eyes of the pre-school child.
3. More extended medical service for school children.
4. Improvement in school plants to produce the best environmental conditions.
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